

WHAT IS CLAIMED IS:

1. An inline screw plasticizing injection apparatus which plasticizes and injects a thermoplastic resin pellet including long glass fibers having a length substantially the same as
5 a length of the pellet and aligned in a longitudinal direction of the pellet, the injection apparatus comprising:

a screw having a diameter not less than 100 mm;

~~a hollow heating cylinder in which the screw is provided;~~

a screw head coupled to the screw through a shaft;

10 a weir plate fixed at a rear end of the shaft; and

a check ring slidably fitted around the shaft so as to be capable of reciprocating between the screw head and the weir plate in a space defined by the shaft and the heating cylinder so that a molten resin path is formed the by the heating
15 cylinder, the screw head, the shaft, the check ring and the weir plate;

wherein

a ratio of a length (L) / a diameter (D) in the screw is set to 18 through 24,

20 a length (Lf) of a supplying portion of the screw is set to 10 through 14 times the diameter (D),

a groove depth (hf) of the supplying portion of the screw is set to be not less than 13 mm,

a groove depth (hm) of a measuring portion of the screw
25 is set to be not less than 8 mm, and

a width in a direction orthogonal to a flow direction of the molten resin in the molten resin path formed by the weir plate and the check ring is set to 3 through 6 % of the diameter (D) of the screw.

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2. The inline screw plasticizing injection apparatus according to Claim 1, wherein an angle of θ between end faces of the weir plate and the check ring and a vertical axis is set to 70 through 90°.

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3. The inline screw plasticizing injection apparatus according to Claim 1, wherein a projection provided on a front side of the check ring is fitted to a notch of the screw head and in rotating the screw, the check ring is rotated along therewith.

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4. The inline screw plasticizing injection apparatus according to Claim 1, characterized in that a width of the check ring is set to 0.3 through 0.4 times the diameter (D) of the screw.

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5. The inline screw plasticizing injection apparatus according to Claim 1, characterized in that a matrix polymer of the long glass fiber reinforced thermosetting resin is constituted by a polypropylene resin having a high fluidity

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in which a melt flow rate thereof falls in a range of 100 through 300 g/10 min.